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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,625	02/26/2002	Robert Brown	09712-168001/Z-274	5321
26161	7590	10/02/2003	EXAMINER	
FISH & RICHARDSON PC 225 FRANKLIN ST BOSTON, MA 02110				SONG, SARAH U
ART UNIT		PAPER NUMBER		
		2874		

DATE MAILED: 10/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/085,625	BROWN ET AL.	
	Examiner	Art Unit	
	Sarah Song	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-30 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 10 May 2002 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>0202</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The prior art documents submitted by the applicant in the Information Disclosure Statement filed on February 26, 2002 have all been considered and made of record (note the attached copy of form PTO-1449).

Drawings

2. This application has been filed with thirteen (13) sheets of drawings, which have been approved by the Examiner.

Claim Objections

3. Claims 1, 4, 5 and 8 are objected to because of the following informalities: “the plunger mechanism” in claims 1 and 5 lacks proper antecedent basis; “the substrate carrier” in claim 4 lacks proper antecedent basis; and “the fiber holder” in claim 8 lacks proper antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claim 11-14 and 27-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Basavanhally et al. (U.S. Patent 5,135,590).** Basavanhally et al. discloses an apparatus for handling optical fibers comprising a fiber magazine 26 having a plurality of grooves 27 formed in a surface of the magazine, wherein during operation of the apparatus, each of the plurality of

grooves holds one of the plurality of fibers (see Figure 4), at least one airflow hole 28 formed in the bottom of each of the plurality of grooves, wherein during operation of the apparatus, a vacuum source 31 draws a flow of air through the airflow holes, the forces associated with the flow of air holding the fibers within the plurality of grooves (column 4, lines 3-5). The apparatus further comprises an airflow plenum 29 formed in a central region of the magazine, the airflow plenum connected to one or more of the airflow holes 28 formed in the grooves, wherein during operation of the apparatus, a vacuum source draws air from the plenum and from the airflow holes. Figure 5 shows the ends of each of the fibers protruding beyond a front edge of the fiber magazine. The fiber magazine comprises a removable fiber magazine, wherein each time the end of a fiber is placed by the apparatus, the corresponding fiber being held in the corresponding magazine groove is dislodged from the magazine groove (column 4, lines 22-24). The associated method sets forth requisite steps for operation of the apparatus and is therefore inherent.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 15, 16 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Basavanhally et al. as applied to claim 11 or 27 as applicable above, and further in view of Higgins, III (U.S. Patent Application Publication 2002/0131729).** Basavanhally et al. does not explicitly disclose a fiber spool placed on an axle. Higgins, III discloses a fiber spool mounted on an axle provided with the apparatus. It would have been obvious to one having

ordinary skill in the art to provide a fiber spool placed on an axle since it was known that fiber spools organize and hold excess lengths of fiber for future use.

8. **Claims 1, 2, 4-6 and 17 rejected under 35 U.S.C. 103(a) as being unpatentable over Evans et al. (U.S. Patent 5,506,928) in view of Nguyen (U.S. Patent 5,194,105).** Evans et al. discloses an apparatus for placing a fiber on a substrate, comprising a first placement head 1 attached to a support member 8 and having an airflow channel 12 formed proximate the tip; a substrate holder (See figure 2), wherein the during operation of the apparatus, the substrate holder holds a substrate 5 beneath the placement head 1, and wherein, during operation of the apparatus, a vacuum source 15 draws a flow of air through the airflow channel, and wherein, during operation of the apparatus, the placement head picks up and holds a fiber against the placement head using forces associated with the flow of air (see Figure 5).

9. Evans et al. does not specifically disclose grooves formed in a surface of the substrate, an extendable plunger slidably coupled o the first placement head, a base, and a supporting member attached to the base.

10. It is well known in the art to form grooves in the surface of a substrate to facilitate alignment of a component and an optical fiber. Therefore, it would have been obvious to one having ordinary skill in the art to provide a substrate having longitudinal grooves to receive the fiber and to facilitate alignment of the optical fiber and the component of Evans et al.

11. It is also well known to provide apparatus components on a base for fixedly securing the apparatus components. Therefore, it would have been obvious to one having ordinary skill in the art to provide a base, the supporting member and the substrate holder being attached to the base, to securely mount the supporting member and the substrate holder with respect to one another.

12. Nguyen discloses a placement head having an extendable plunger 17 slidably coupled to the placement head 16. See Figures 1 and 3. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the extendable plunger slidably coupled to the placement head of Evans et al. for providing bonding pressure and ensuring contact between the fiber and the sidewall of the grooves. Method claim 17 would have been obvious for the same reasons.

13. Regarding claim 4, Evans does not specifically disclose a removable substrate pallet disposed between the substrate and the substrate holder. Removable pallets are well known for automated processes. Therefore, it would have been obvious to one having ordinary skill in the art to provide a pallet for holding the substrate to facilitate mounting and dismounting the substrate from the apparatus without damage to the substrate.

14. Regarding claims 5 and 6, Evans discloses a fiber holder (shown at a location distal from the placement head above reference numeral 20 in Figure 2), wherein during operation the fiber holder holds a fiber between the plunger mechanism (placement head) and a substrate groove, and wherein the fiber holder holds the fiber in longitudinal alignment with the plunger tip (placement head) and the substrate groove (see Figure 1). The plunger comprises a groove-shaped tip, wherein during operation, the fiber is drawn against the groove-shaped tip by forces associated with the flow of air through the placement head.

15. **Claims 3, 7 and 18-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evans et al. in view of Nguyen as applied to claim 2 above, and further in view of Ebata et al. (U.S. Patent 4,854,667).** Evans et al., discussed above, does not specifically disclose a substrate holder comprising a movable stage. Ebata et al. discloses a fiber alignment

apparatus comprising a movable fiber holder 13 and a movable component stage 16. It would have been obvious to provide the movable component stage in the apparatus of Evans et al. to simplify the movements and associated control of the placement head required to attain alignment. The method of claim 18 would have been obvious for the same reason.

16. Regarding claim 19, 21-23, it is well known in the art to form grooves in the surface of a substrate to facilitate alignment of a component and an optical fiber. It would have been obvious to hold the groove of the substrate in line with the optical fiber and thus parallel to the longitudinal axis of the fiber and the plunger (placement head having a groove-shaped tip) of Evans et al. to receive a length of the optical fiber. As stated above, air is drawn through the channel during operation of the apparatus.

17. Regarding claim 20, Evans does not specifically disclose holding the substrate on a removable substrate pallet disposed on the movable stage. Removable pallets are well known for automated processes. Therefore, it would have been obvious to one having ordinary skill in the art to provide a pallet for holding the substrate to facilitate mounting and dismounting the substrate from the apparatus without damage to the substrate.

18. Regarding claim 24, the prior art discloses the claimed invention except for the method comprising the second placement head. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the second placement head, since it has been held that mere duplication of essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. Thus, the duplicate method for using the duplicate part would have also been obvious to one having ordinary skill in the art.

19. **Claim 8, 9, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evans et al. as applied to claim 1 or 21 as applicable above, and further in view of Higgins,**

III. Evans et al. discloses a fiber holder as discussed above, but does not specifically disclose a fiber holder comprising a movable stage to move perpendicular to the placement head. Higgins, III discloses a fiber holder comprising a movable stage (inherent) (Figures 3 and 4) to move perpendicular to a placement head 60. It would have been obvious to provide the movable fiber holder and movable stage of Higgins, III to reduce the range of motion required by the placement head of Evans et al. Evans et al. does not specifically disclose a fiber magazine. A fiber magazine for holding a plurality of fibers would have been obvious to one having ordinary skill in the art to align a plurality of optical fibers with a plurality of components in a batch process.

20. **Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Evans et al. in view of Higgins, III as applied to claim 9 above, and further in view of Basavanhally et**

al. Neither Evans et al. nor Higgins III discloses a fiber magazine as claimed. Basavanhally et al. discloses a fiber magazine as claimed. It would have been obvious to one having ordinary skill in the art to provide the magazine of Basavanhally et al. in the apparatus of Evans et al. to provide a simple means for providing a plurality of optical fibers for alignment to optical components in a batch process.

Conclusion

21. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

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the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

22. Any inquiry concerning the merits of this communication should be directed to Examiner Sarah Song at telephone number 703-306-5799. Any inquiry of a general or clerical nature, or relating to the status of this application or proceeding should be directed to the receptionist at telephone number 703-308-0956 or to the technical support staff supervisor at telephone number 703-308-3072.

Sarah Y. Song

John D. Lee
John D. Lee
Primary Examiner